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From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

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**SPOOR & FISHER**

2005 -01- 27

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

SEEN
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ENTERED BY

Date of mailing

(day/month/year)

24.01.2005

Applicant's or agent's file reference

PA134046/PCT

**IMPORTANT NOTIFICATION**

International application No.

PCT/B 03/03921

International filing date (day/month/year)

12.09.2003

Priority date (day/month/year)

30.10.2002

Applicant

ELEMENT SIX (PROPRIETARY) LIMITED

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

**4. REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/B/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:

European Patent Office - P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
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**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PA134046/PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/B 03/03921	International filing date (day/month/year) 12.09.2003	Priority date (day/month/year) 30.10.2002
International Patent Classification (IPC) or both national classification and IPC E21B10/56		
Applicant ELEMENT SIX (PROPRIETARY) LIMITED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of    sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  21.05.2004	Date of completion of this report  24.01.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Dantinne, P  Telephone No. +31 70 340-3396 

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/B 03/03921

**1. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-5 as originally filed

**Claims, Numbers**

1-6 as originally filed

**Drawings, Sheets**

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/B 03/03921

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-6
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1) The application does not meet the requirements of Article 6 PCT, because claim 1 is not clear.

1.1) The expression "...ring extending laterally from the support surface.." in the first paragraph of claim 1 is not clear. First, the support surface is not well defined in the description. This surface could be the upper top surface, the surface between the substrate and the carbide or the base surface of the substrate. The examining division has considered this surface as the surface between the substrate and the PCD layer. However a ring extending "laterally" from this surface cannot be interpreted.

1.2) For the purpose of examination, the embodiment described in figure 1 has been considered and the ring considered as extending up from the support surface with the axis of the ring parallel to the longitudinal axis of the tool insert.

1.3) In the description, the support surface is referred to number 17 which is not indicated in any drawing of the application. Therefore this reference will need to be deleted as it is not unambiguously derivable from the entire disclosure which surface is the support surface.

2) Reference is made to the following documents:

D1: US-A-5 979 571 (NAZZAL GREG ET AL) 9 November 1999

D2: US-B-6 187 0681 (FRUSHOUR ROBERT H ET AL) 13 February 2001

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

2.1) The document D1 discloses (the references in parentheses applying to this document; see fig. 10; column 5 line 8 - column 6 line 3):

A tool insert (20e) comprising:

a substrate (22) having a support surface and a support ring (28) extending **up from the support surface** (see paragraph 1), the support ring defining a recess within the

confines thereof and a shelf about the periphery thereof;

a layer (24) of ultra-hard abrasive material located within the recess and bonded to the substrate (22) and the support ring (28), the layer of ultra-hard abrasive material having a top surface (21), a portion of the periphery of the top surface providing a primary cutting edge for the tool insert; and

a protective layer (26) bonded to the shelf about the support ring (28) so as to protect the primary cutting edge, a periphery of the protective layer providing a secondary cutting edge for the tool insert, the depth of the protective layer being selected so as to be sufficient to protect the primary cutting edge whilst cutting, milling or drilling through a first substance but to expose the primary cutting edge upon encountering a second substance.

2.2) The subject-matter of claim 1 therefore differs from this known tool insert in that :

the protective layer and the support ring are integral and of the same material.

2.3) This is considered to be a constructional feature. In the description on page 3 line 14 - 22, it is disclosed that the protective ring may be formed of a different grade of tungsten carbide or alternatively be formed of a tool steel or other appropriate material. This thus includes also the same material as the substrate. Furthermore to place a ring of different material on the outside of an insert to improve the performance is well-known in the art as can be seen in D2 (fig. 3,5,10,11).

Thus, the subject-matter of claim 1 does not involve an inventive step and does not satisfy the criterion set forth in Article 33(3) PCT.

3) Dependent claims 2-6 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, for the following reasons:

Claim 2: Ring disclosed in D1 is integrally formed with substrate.(see fig. 10)

Claim 3: See claim 6 of D1.

Claim 4: See claim 2 of D1.

Claims 5,6: Well-known manufacturing processes for inserts.